

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the Application of:	)
Mats Dahlbäck	) Examiner: Weiping Zhu
	) Art Unit: 1793
Title: METHOD, USE AND DEVICE	)
RELATING TO NUCLEAR LIGHT	)
WATER REACTORS	) Confirmation No. 9490
	)
Serial No.: 10/538,973	)
	)
Filing Date: June 14, 2005	) (Docket No. 1026-0003WOUS)

Middletown, Connecticut, August 27, 2009

Board of Patent Appeals and Interferences  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REPLY BRIEF**

Sir:

This is a reply to an Examiner's Answer mailed on July 15, 2009, in the above-identified appeal to the Board of Appeals.

## REMARKS

Claims 18-21, 23, and 31 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,149,738 to Dahlbäck (hereinafter “Dahlbäck”) in view of U.S. Patent No. 6,176,104 to Garzarolli et al. (hereinafter “Garzarolli”). Claims 1-17, 22, and 24-30 have been cancelled. Claims 18 and 31 are independent claims.

With regard to the claims rejected under Dahlbäck in view of Garzarolli in the section entitled “Grounds of Rejection” in the Examiner’s Answer, the Examiner alleges that Dahlbäck discloses:

a method of producing and treating a sheet for a component in a fuel assembly for a nuclear light water reactor comprising ... producing a sheet of a Zr-base alloy by forging, hot-rolling and cold-rolling in a number of steps, wherein said alloy contains by weight at least about 96% of Zr; carrying out a  $\beta$  quenching when the sheet has been produced in the finished dimension or almost finished dimension; and heat treating the sheet after the  $\beta$  quenching in a temperature range of 600-800° C (i.e. the  $\alpha$ -phase temperature range of the alloy).

The Examiner admits that Dahlbäck does not disclose that the sheet is stretched by 0.1% to 7% or 0.2% to 4% in a direction corresponding to a longitudinal direction of a component for which the sheet is intended during the heat treatment as is recited in claims 18 and 31, respectively.

The Examiner then alleges that Dahlbäck, however, discloses that during the heat treatment the flatness of the sheet is restored. The Examiner further alleges that Garzarolli discloses lengthening a tube during a straightening operation by stretching the tube by an amount that overlaps the ranges recited in claims 18 and 31 of the instant application. The Examiner then alleges that, therefore, a prima facie case of obviousness exists and it would have been obvious to flatten the sheet by stretching the sheet by at least 0.3% in a certain direction during the heat treatment as disclosed by Garzarolli in order to generate internal stress in the sheet as discussed by Garzarolli.

The Examiner also alleges that with the claimed stretching and heat treatment being carried out in a continuous oven process, Dahlbäck discloses heat treating and flattening the sheet in a temperature range of 600-800 C° (the  $\alpha$ -phase temperature range of the alloy) in a continuous furnace and that it would have been obvious to flatten the sheet of Dahlbäck in a

continuous furnace by stretching the sheet in a particular direction during the heat treatment as disclosed by Garzarolli in order to generate internal stress in the sheet.

Claims 18 and 31 of the present application explicitly recite that the sheet is stretched during the heat treatment.

Dahlbäck fails to disclose, teach, or suggest any stretching of a sheet during the heat-treatment. Furthermore, Dahlbäck fails to disclose, teach, or suggest any stretching carried out in a continuous oven process, any stretching such that the remaining elongation as recited in claims 18 and 31 is achieved (and certainly no remaining elongation of at least 0.1%), and any stretching in the direction recited in claims 18 and 31. In fact, Dahlbäck fails to disclose any stretching at all.

Garzarolli also fails to disclose, teach, or suggest stretching during the heat-treatment. Furthermore Garzarolli is not compatible with Dahlbäck and cannot be combined therewith.

Dahlbäck is concerned with a plate material for a boiling water reactor (BWR) and heat-treatment of the plate material to improve corrosion properties and to restore flatness, as stated in the passage relied upon by the Examiner (Dahlbäck, column 4, lines 52-56). More particularly, Dahlbäck is concerned with treatment of the plate material in order to obtain a special form of a Widmanstätten structure, i.e., a “basketweave” structure. Garzarolli, on the other hand, is concerned with a pressurized water reactor (PWR) and in particular with tubular elements (guide tubes) used in a fuel assembly for a PWR. Unlike Dahlbäck, Garzarolli is therefore not at all concerned with any restoration of flatness, since the tubular elements of Garzarolli would of course not function as guide tubes if they were flat. Instead, Garzarolli is concerned with the problem of radiation-induced growth of the guide tubes in a PWR. This is a particular problem for a PWR but not for a BWR since a BWR does normally not include any such guide tubes. The plate material with which Dahlbäck is concerned has nothing to do with guide tubes for a PWR and the particular problems that may be caused by the radiation-induced growth of such guide tubes in a PWR (as has been explained in the Appeal Brief). It is only with knowledge of the present invention, i.e., with the use of impermissible hindsight, that one of skill in the art could suggest combining Dahlbäck and Garzarolli in the manner done by the Examiner.

In the “Response to Argument” section of the Examiner’s Answer, the Examiner also alleges that “the ‘non-stretching’ straightening of the sheet disclosed by Dahlbäck and the claimed stretching of the sheet serve the same purpose of flattening the sheet. Therefore, the

claimed stretching of the sheet reads on the restoration of the flatness of the sheet disclosed by Dahlbäck.” Appellants respectfully disagree, since the “restoration of flatness” does not imply stretching.

Furthermore, irrespective of whether or not the alleged “non-stretching” straightening of the sheet disclosed by Dahlbäck and the claimed stretching of the sheet serve the same purpose of flattening the sheet, Appellant claims a method of producing and treating a sheet. Appellant’s understanding is that method claims are different from other types of claims in that they set forth acts or manipulative steps that are performed upon an element, article, or workpiece to define a finished product. Identical finished products could be produced by different steps. Therefore, serving the same alleged purpose, which in this case is alleged by the Examiner to be the flattening of a sheet, is irrelevant in view of the setting forth of the specific steps of the method recited in claims 18 and 31.

Garzarolli does not disclose, teach, or suggest any stretching during a heat treatment, and Garzarolli certainly does not disclose, teach, or suggest stretching in a continuous oven process. Furthermore, as stated in the Appeal Brief, because Garzarolli is directed to a completely different type of nuclear reactor (i.e., a PWR versus a BWR, as in Dahlbäck), Garzarolli is not applicable in this case and is not even combinable with Dahlbäck for the purposes of rejecting the claims of the present application.

Because both Dahlbäck and Garzarolli fail to disclose, teach, or suggest any stretching of a sheet during the heat-treatment, and further because Dahlbäck and Garzarolli are not properly combinable to render the present invention as recited in the claims of the application obvious, Appellant respectfully requests that the rejections of the claims be withdrawn.

For the reasons discussed above and in the Appeal Brief, Appellant maintains that this application is in a condition for allowance and thus reversal of the outstanding rejections and allowance of the application is appropriate.

If any charges are incurred with respect to this Reply Brief, they may be charged to Deposit Account No. 503342 maintained by Appellant's attorneys.

Respectfully submitted,

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